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L4: Entry 1 of 2

File: JPAB

Aug 13, 1982

PUB-NO: JP357130954A

DOCUMENT-IDENTIFIER: JP 57130954 A

TITLE: ESTERIFICATION

PUBN-DATE: August 13, 1982

INVENTOR-INFORMATION:

NAME

COUNTRY

IZUMI, YUSUKE

US-CL-CURRENT: 560/237

INT-CL (IPC): C07C 67/08; B01J 21/18; B01J 23/24; B01J 27/18

ABSTRACT:

PURPOSE: In esterifying an acid with an alcohol, to obtain an ester in high yield with suppressing the occurrence of an ether, etc. as by-products free from the elution of a catalyst component to a reaction system, by using a catalyst with a carrier as a catalyst obtained by supporting a heteropolyacid on active carbon.

CONSTITUTION: Using a catalyst with a carrier obtained by supporting a heteropolyacid such as 12-molybdophosphoric acid, 12-tungstosilicic acid, 12-tungstoboric acid, etc. or its salt such as a metal salt of the I group, II group, III group, IV group, etc. of periodic table on active carbon, an acid is reacted with an alcohol to give an ester. The supported amount of the heteropolyacid is 5~20wt% preferably 10~15wt%. The catalyst is obtained by adding a given amount of active carbon to a solution of the heteropolyacid, stirring them sufficiently for a fixed time to adsorb the heteropolyacid on the active carbon, filtering and removing the active carbon, washing it until no heteropolyacid is observed, and, if necessary, drying it.

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[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

=> s ethyl acetate/cn
L2 1 ETHYL ACETATE/CN

=> d

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 141-78-6 REGISTRY
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Acetic acid, ester with EtOH (7CI)

OTHER NAMES:

CN Acetic acid, ethyl ester

CN Acetic ether

CN Acetidin

CN Acetoxyethane

CN **Ethyl acetate**

CN Ethyl ethanoate

CN EtOAc

CN NSC 70930

CN Vinegar naphtha

FS 3D CONCORD

MF C4 H8 O2

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,
GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*,
SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL,
VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;
Preprint; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC
(Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role
in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
study); BIOL (Biological study); PREP (Preparation); PRP (Properties);
RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);
MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
(Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP
(Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
reagent); USES (Uses)

Et--O--Ac

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

24592 REFERENCES IN FILE CA (1907 TO DATE)

111 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

24624 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus

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FILE COVERS 1907 - 30 Aug 2004 VOL 141 ISS 10
FILE LAST UPDATED: 29 Aug 2004 (20040829/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s 141-78-6/prep
      24634 141-78-6
      3189446 PREP/RL
L3      1508 141-78-6/PREP
          (141-78-6 (L) PREP/RL)

=> s 141-78-6/proc
      24634 141-78-6
      3543731 PROC/RL
L4      2287 141-78-6/PROC
          (141-78-6 (L) PROC/RL)

=> s 13 or 14
L5      3693 L3 OR L4

=> s 15 and acetic acid and ethanol
      205019 ACETIC
      3861313 ACID
      177854 ACETIC ACID
          (ACETIC(W)ACID)
      216862 ETHANOL
L6      538 L5 AND ACETIC ACID AND ETHANOL

=> s 16 and silica
      444481 SILICA
L7      31 L6 AND SILICA

=> s 17 and heteropolyacid
      1163 HETEROPOLYACID
L8      0 L7 AND HETEROPOLYACID

=> s 16 and heteropolyacid
      1163 HETEROPOLYACID
L9      0 L6 AND HETEROPOLYACID

=> s 17 and catalyst
      664573 CATALYST
L10     21 L7 AND CATALYST

=> s 110 and py<2000
      19724346 PY<2000
L11     13 L10 AND PY<2000
```

=> d .1-5 ibib abs hitstr

L11 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:760399 CAPLUS

DOCUMENT NUMBER: 132:53987

TITLE: VOC removal: investigation of ethylacetate oxidation over supported Pt catalysts

AUTHOR(S): Papaefthimiou, P.; Ioannides, T.; Verykios, X. E.

CORPORATE SOURCE: Department of Chemical Engineering, University of Patras, Patras, GR-265 00, Greece

SOURCE: Catalysis Today (1999), 54(1), 81-92

CODEN: CATTEA; ISSN: 0920-5861

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Oxidation of ethylacetate in trace amts. in air was studied over supported Pt catalysts. Steady-state kinetic expts. showed that Pt dispersed on W6+-doped TiO₂ was the most active **catalyst**. **Acetic acid** and acetaldehyde were the main byproducts at low and intermediate conversions. Temperature-programmed desorption (TPD) and oxidation (TPO) of labeled ethylacetate, (13CH₃13COOCH₂CH₃), as well as differential scanning calorimetry (DSC) of ethylacetate, NH₃, and CO₂ were used to obtain information on surface processes occurring under heating in inert or oxidizing atmospheric and on the acidic/basic character of the support surfaces. The high activity of the Pt/TiO₂ (W6+) **catalyst** under steady-state conditions is attributed to the presence of a large number of acidic sites with appropriate strength on the TiO₂ (W6+) surface, leading to the formation of a large pool of highly mobile reactive intermediates.

IT 141-78-6, Ethylacetate, processes

RL: PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); **PROC (Process)**

(temperature effect on volatile organic compound removal from air by oxidation following adsorption on tungsten-doped, supported platinum catalysts)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:402243 CAPLUS

DOCUMENT NUMBER: 131:171839

TITLE: Study of Rh-Sm-V-Li/SiO₂ **catalyst** for CO hydrogenation reaction to C₂-oxygenates

AUTHOR(S): Zhang, Wei; Luo, Hongyuan; Zhou, Huanwen; Wu, Zhihua; Huang, Shiyu; Liu, Chongzao; Chu, Huiping; Lin, Peizi; Lin, Liwu

CORPORATE SOURCE: Dalian Inst. Chemical Physics, The Chinese Academy Sciences, Dalian, 116023, Peop. Rep. China

SOURCE: Cuihua Xuebao (1999), 20(3), 285-289

CODEN: THHPD3; ISSN: 0253-9837

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Rh-Sm-V-Li/SiO₂ **catalyst** for CO hydrogenation reaction under pressure was studied by TPR, adsorption of CO and H₂, and H₂-TDP. The addition of Sm, V and Li to Rh/SiO₂ improved the activity and selectivity for C₂-oxygenates. The yield of and selectivity for C₂-oxygenates can reach 361.7 g/(kg·h) and 59.1% on 1% Rh-0.5% Sm-0.5% V-0.01% Li/SiO₂ **catalyst**, resp. The Sm³⁺ ions on the **catalyst** are difficult to be reduced and thus improved the dispersion of Rh, increasing the uptake of CO and H₂ and promoting the formation of **acetic acid** and acetaldehyde. The vanadium ions with higher valence on the **catalyst** are easy to be reduced to those with lower valence, migrate on the Rh surface, and decrease the uptake of CO and H₂. The V

.with lower valence had good storage capability for H₂, enhanced the ability for hydrogenation and promoted the formation of EtOH.

IT **141-78-6P**, Ethyl acetate, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(Rh-Sm-V-Li/SiO₂ **catalyst** for hydrogenation of CO to C₂-oxygenates)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:402230 CAPLUS

DOCUMENT NUMBER: 131:171836

TITLE: A study of CO hydrogenation to C₂-oxygenates on Rh-Sm/SiO₂ **catalyst**

AUTHOR(S): Zhang, Wei; Luo, Hongyuan; Zhou, Huanwen; Wu, Zhijua; Huang, Shiyu; Liu, Chongzao; Chu, Huiping; Lin, Peizi; Lin, Liwu

CORPORATE SOURCE: Dalian Inst. Chemical Physics, The Chinese Academy Sciences, Dalian, 116023, Peop. Rep. China

SOURCE: Cuihua Xuebao (1999), 20(3), 259-262
CODEN: THHPD3; ISSN: 0253-9837

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Rh-Sm-V/SiO₂ **catalyst** for CO hydrogenation under pressure was studied by temperature-programmed reduction, adsorption of CO and H₂, and temperature-programmed desorption of adsorbed H₂. The Sm addition improved the activity of the **catalyst** and selectivity for C₂-oxygenates. CO conversion of 3.38% can be obtained on 1% Rh-0.5% Sm/SiO₂, compared to 1.72% on 1% Rh/SiO₂. The yield of and selectivity for C₂+oxygenates formation were increased from 37.4 to 176.1 g/(kg·h), and from 22.3% to 53.9%, resp., under the conditions of reaction temperature 583 K, pressure 3.0 MPa and GHSV 13,000 h⁻¹. TPR profile of Rh/SiO₂ and Rh-Sm/SiO₂ gave the same area of the reduction peaks. In comparison with 1% Rh/SiO₂, the n(H)/n(Rh) and n(CO)/n(Rh) were increased from 0.42 to 0.90, and from 0.67 to 0.81 on 1% Rh-0.5% Sm/SiO₂, resp. The Sm³⁺ ion on Rh-Sm/SiO₂ catalysts was difficult to be reduced; it played a role of improving the dispersion of Rh, increasing the adsorption of CO and H₂, and promoting the formation of **acetic acid** and acetaldehyde.

IT **141-78-6P**, Ethyl acetate, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(CO hydrogenation to C₂-oxygenates on Rh-Sm/SiO₂ **catalyst**)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:627964 CAPLUS

DOCUMENT NUMBER: 129:205166

TITLE: Fuel cell hydrogen production by catalytic **ethanol**-steam reforming

AUTHOR(S): Amphlett, J. C.; Leclerc, S.; Mann, R. F.; Peppley, B. A.; Roberge, P. R.

CORPORATE SOURCE: Royal Military College of Canada, Kingston, ON, K7K 7B4, Can.

SOURCE: Proceedings of the Intersociety Energy Conversion Engineering Conference (1998), 33rd, IECEC269/1-IECEC269/7
CODEN: PIECDE; ISSN: 0146-955X

PUBLISHER: Society of Automotive Engineers
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English

AB It is clear that the reaction network that results from catalytic reaction of **ethanol**, with and without steam, is very complex and involves over a dozen potential products. Reactions to avoid are any that lead to C4 species and ethylene - the former representing a more difficult challenge for subsequent steam reforming and the latter providing what is probably the major route to carbon production and "coking" of the **catalyst**. Dehydration reactions, therefore, should generally be avoided. Dehydrogenation catalysts would seem to be most appropriate, especially since the production of hydrogen is the main goal. Copper-based catalysts have been long-established for this function so that they are com. available and therefore lower cost. CuO/ZnO, CuO/SiO₂, CuO/Cr₂O₃ or CuO/NiO/SiO₂ may be the best **catalyst** candidates. Reaction pressures should be relatively low (1 to a few atm) and the best reaction temperature could be in the range 350 to 450°. Insufficient exptl. work has been reported to give a clear idea of the required water-to-**ethanol** mole ratio. The stoichiometric value of this ratio is three and it is likely that excess water, although presenting some process complications, will be necessary to minimize yields of CO and CH₄. A major new aspect of **catalyst** selection and operation, when comparing **ethanol** to methanol steam reforming, will be **catalyst** deactivation due to temperature

IT 141-78-6P, Ethyl acetate, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(fuel cell hydrogen production by catalytic **ethanol**-steam reforming)

RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:764000 CAPLUS

DOCUMENT NUMBER: 128:79133

TITLE: Performance of doped Pt/TiO₂ (W6+) catalysts for combustion of volatile organic compounds (VOCs)
AUTHOR(S): Papaefthimiou, Panagiotis; Ioannides, Theophilos; Verykios, Xenophon E.

CORPORATE SOURCE: Department of Chemical Engineering, University of Patras, GR-26500 Patras, Greece

SOURCE: Applied Catalysis, B: Environmental (1998), 15(1-2), 75-92

CODEN: ACBEE3; ISSN: 0926-3373

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The oxidation of benzene and ethylacetate in air over Pt supported on γ-Al₂O₃, SiO₂, TiO₂ and TiO₂ (W6+) carriers was studied. It was found that doping of the TiO₂ support with W6+ cations has a pos. effect on the activity of Pt catalysts for benzene and ethylacetate oxidation. A maximum in activity enhancement was observed at a W6+ content of 0.45 atomic% in the TiO₂ support. The Pt/TiO₂ (0.45 atomic% W6+) **catalyst** is over 2 orders of magnitude more active than the Pt/γ-Al₂O₃ **catalyst** in the case of ethylacetate oxidation and 1 order of magnitude more active in the case of benzene oxidation. Doping of TiO₂ with W6+ cations enhances its activity for ethylacetate degradation towards smaller organic intermediates, such as **ethanol**, **acetic acid** and ethylene, and it also affects product distribution. The enhanced activity of the Pt/TiO₂ (W6+) catalysts is attributed to complementary bifunctional steps occurring on sites offered by Pt metal and by the support. During oxidation of benzene-ethylacetate-water mixts., benzene oxidation is strongly suppressed in the presence of ethylacetate,

while water acts as an inhibitor for both VOC oxidation
IT 141-78-6, Ethylacetate, processes
RL: REM (Removal or disposal); PROC (Process)
(tungsten-doped platinum/titania catalysts for combustion of volatile
orgs.)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 6-10 ibib abs hitstr

L11 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:369616 CAPLUS
DOCUMENT NUMBER: 125:171484
TITLE: Synthesis of C2 oxygen-containing compounds from
carbon monoxide and hydrogen on rhodium-containing
heterogeneous catalysts under pressure
AUTHOR(S): Mamedov, A. P.
CORPORATE SOURCE: Aktsionernoe Obshchestvo Vserossiiskii
Nauchno-Issledovatel'skii Institut Organicheskogo
Sinteza, Moscow, Russia
SOURCE: Neftekhimiya (1996), 36(2), 132-141
CODEN: NEFTAH; ISSN: 0028-2421
PUBLISHER: Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Rh catalysts for producing **acetic acid**,
ethanol, and acetaldehyde were tested. The highest activity in
the 180-380° temperature range and 2.0-5.0 MPa pressure range was observed
for catalysts containing 2.5% Rh supported by wide-porous SiO2 with a sp.
surface area of 30 m2/g. La, Ce, and Re can be used as effective
promoters. The most efficient of the catalysts examined were stable for 150
h at 10.0 MPa and 300-330°, yielding 55-65 g/(kg h) of
ethanol or 60-68 g/(kg h) of O-containing C2 products.

IT 141-78-6P, Ethyl acetate, preparation
RL: BYP (Byproduct); PREP (Preparation)
(Rh catalysts for conversion of synthesis gas to O-containing C2 compds.)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:348201 CAPLUS
DOCUMENT NUMBER: 125:86009
TITLE: On the mechanism of carbonylation in **acetic
acid** and higher acid synthesis from methanol
and syngas mixtures on supported rhodium catalysts.
AUTHOR(S): Chateau, L.; Hindermann, J. P.; Kiennemann, A.;
Tempesti, E.
CORPORATE SOURCE: LERCSI-EHICS-URA CNRS 1498, 1, rue Blaise Pascal,
Strasbourg, 67000, Fr.
SOURCE: Journal of Molecular Catalysis A: Chemical (
1996), 107(1-3), 367-378
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In high pressure gas phase conditions, methanol and syngas mixts. can be

converted to acetic and higher carboxylic (C3-C5) acids on supported rhodium catalysts in presence of Me iodide. Chemical trapping and FTIR spectroscopic studies show that two mechanisms are involved in the carboxylic acid formation. One is the conventional carbon monoxide insertion model on the rhodium part of the **catalyst**. The second proceeds through the isomerization of Me formate on the support. On the support alone the chain growth stops at the C2-intermediate since no rhodium is present to convert **acetic acid** or Me acetate to **ethanol** or ethoxy species.

IT **141-78-6P**, Ethyl acetate, reactions
 RL: BYP (Byproduct); PEP (Physical, engineering or chemical process); RCT (Reactant); **PREP (Preparation)**; **PROC (Process)**; RACT (Reactant or reagent)
 (mechanism of carbonylation in **acetic acid** and higher acid synthesis from methanol and syngas mixts. on supported rhodium catalysts.)
 RN 141-78-6 CAPLUS
 CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:488078 CAPLUS
 DOCUMENT NUMBER: 122:239191
 TITLE: Process and catalysts for the carbonylation-transesterification preparation of acetate esters from methanol
 INVENTOR(S): Uhm, Sung Jin; Han, Sung Hwan; Oh, Jun Woo; Joo, Oh Shim; Jung, Kwang Deog; Lee, Moon Sang
 PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
 SOURCE: Eur. Pat. Appl., 16 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 640583	A2	19950301	EP 1994-111650	19940726 <--
EP 640583	A3	19950802		
EP 640583	B1	20000216		
R: DE, ES, FR, GB, IT				
KR 9606546	B1	19960517	KR 1993-14392	19930728 <--
ES 2144472	T3	20000616	ES 1994-111650	19940726
US 5430178	A	19950704	US 1994-281187	19940727 <--
JP 07149691	A2	19950613	JP 1994-176537	19940728 <--
JP 2807176	B2	19981008		

PRIORITY APPLN. INFO.: KR 1993-14392 A 19930728

OTHER SOURCE(S): CASREACT 122:239191; MARPAT 122:239191

AB Acetate esters are economically produced by the gas-phase carbonylation of MeOH with CO followed by transesterification in a process comprising: (a) carbonylating MeOH with CO to produce a mixture of AcOH (I) and MeOAc (II), (b) separating from the production mixture the I and a mixture of the II and cocatalyst, (c) further separating I and the cocatalyst and recycling the separated cocatalyst to the carbonylation reactor, (d) introducing the separated II into a lower region of a transesterification reactor at a temperature above its b.p., (e) introducing a C₂ alc. (e.g., EtOH, iso-PrOH, BuOH, etc.) into an upper region of the transesterification reactor at a temperature up to its b.p., (f) transesterifying the II with the alc. in the presence of an acid **catalyst** to produce a mixture containing acetate esters, and (g) recovering the acetate esters from the mixture as a bottoms product while recycling the unreacted II and MeOH to the carbonylation reactor or distillation column. A process flow diagram is presented.

IT **141-78-6P**, Ethyl acetate, preparation
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); **PREP**

· (Preparation)

(process and catalysts for the carbonylation-transesterification preparation of acetate esters)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et—O—Ac

L11 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:41199 CAPLUS

DOCUMENT NUMBER: 118:41199

TITLE: Preparation and pretreatment of a palladium-based catalyst for preparation of ethyl acetate

INVENTOR(S): Ramos, Ruth Mara Souza; Libergott, Esther Kerdman; Appel, Lucia Gorenstin; De Carvalho, Sonia Elisa; Castro de Almeida, Valeria

PATENT ASSIGNEE(S): Instituto Nacional de Tecnologia, Brazil

SOURCE: Braz. Pedido PI, 17 pp.

CODEN: BPXXDX

DOCUMENT TYPE: Patent

LANGUAGE: Portuguese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 9104562	A	19920616	BR 1991-4562	19911022 <--
PRIORITY APPLN. INFO.:			BR 1991-4562	19911022

AB A 0.1-2.5% Pd/SiO₂ catalyst for EtOAc manufacture is prepared by ion exchange of SiO₂ with an alkaline solution of Pd(NH₃)₄Cl₂, followed by washing to neutrality, drying at 60°, cooling, heating at a rate of 1.0-5.0°C/min, and oxidation of the catalyst with O₂ (flow of 20-30 mL/min) at 400° for 6 h. The catalyst is used to convert EtOH to EtOAc at 70-170°, atmospheric pressure, GHSV of 4000-10,000 h⁻¹, and mol ratio EtOH/air of 0.02-0.03. Yields of approx. 30% and EtOAc selectivity of 65% were obtained at approx. 120°, with the ratio of EtOH to air being held below the inflammability limit. Selectivity for C₂H₄ increased with temperature, whereas those for MeCHO and AcOH reached min. near 150° and 100°, resp. (6 graphs given).

IT 141-78-6P, Ethyl acetate, preparation

RL: PREP (Preparation)

(manufacture of, by oxidation of ethanol, palladium catalyst for)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et—O—Ac

L11 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:635167 CAPLUS

DOCUMENT NUMBER: 115:235167

TITLE: Reforming of ethanol - dehydrogenation to ethyl acetate and steam reforming to acetic acid over copper-based catalysts

AUTHOR(S): Iwasa, Nobuhiro; Takezawa, Nobutsune

CORPORATE SOURCE: Dep. Chem. Process Eng., Hokkaido Univ., Sapporo, 060, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1991), 64(9), 2619-23

CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The title reactions were carried out over Cu-based catalysts (Cu, Cu/SiO₂, Cu/ZrO₂, Cu/Al₂O₃, Cu/MgO, and Cu/ZnO). The selectivities to AcOEt and AcOH markedly depended on the supports used. AcH was formed by dehydrogenation of EtOH and transformed to either AcOEt or AcOH via nucleophilic addition of EtOH (or EtO ions) or H₂O (or OH ions) to AcH. The rates of the transformation steps to EtOAc and AcOH depended on the kinds of supports used. The transformation steps proceeded slowly compared with the dehydrogenation step.

IT 141-78-6P, Ethyl acetate, preparation

RL: IMF (Industrial manufacture); **PREP (Preparation)**

(preparation of, by catalytic conversion of **ethanol**, effect of **catalyst** supports on selectivity of)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:26126 CAPLUS

DOCUMENT NUMBER: 114:26126

TITLE: Preparations and catalytic properties of single, pair, and monolayer niobium catalysts

AUTHOR(S): Shirai, M.; Ichikuni, N.; Asakura, K.; Iwasawa, Y.

CORPORATE SOURCE: Fac. Sci., Univ. Tokyo, Tokyo, 113, Japan

SOURCE: Catalysis Today (1990), 8(1), 57-66

CODEN: CATTEA; ISSN: 0920-5861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The title catalysts involving single, pair, and monolayer Nb sites were prepared by the reaction between surface OH groups of SiO₂ and Nb(η³-C₃H₅)₄, [Nb(η⁵-C₅H₅)H-μ-(η⁵,η¹-C₅H₄)]₂, and Nb(OEt)₅, resp. The obtained Nb sites were attached to the surface through O atoms, showing Nb-Si bonds besides Nb-O bonds as proved by extended x-ray absorption fine structure. The Nb monomers on SiO₂ were active for EtOH dehydrogenation which proceeded on Nb:O bonds with basic character, while the Nb dimers showed dehydration activity to form C₂H₄ and Et₂O, based on acidic character. The Nb monolayers on SiO₂ produced EtOAc from EtOH. The monolayer catalyst also showed a high activity for the formation of EtOAc from EtOH and AcOH. The Nb atoms were suggested to be nearly uniformly supported in a monolayer-growth mode, where the Nb sites showed the Lewis acidic properties available for the catalytic esterification.

IT 141-78-6P, Ethyl acetate, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(preparation of, from ethanol and acetic acid, niobium-silica esterification catalysts for)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:424081 CAPLUS

DOCUMENT NUMBER: 103:24081

TITLE: Oxygen-containing compounds

PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60032725	A2	19850219	JP 1983-141090	19830803 <--
JP 61014128	B4	19860417		

PRIORITY APPLN. INFO.: JP 1983-141090 19830803

AB O-containing compds. are prepared by the reaction of CO with H in the presence of catalysts comprising Rh, U, and/or Fe as well as Ir, Os, Li, Na, K, or Co. Body thus, a mixture of 2.29 g UO₂(NO₃)₂·6H₂O and 10 g silica gel in EtOH [64-17-5] was dried in vacuum, calcined in air overnight at 500°, added to a mixture of RhCl₃·3H₂O 1.2, IrCl₄·H₂O 0.322, and FeCl₃·6H₂O 0.37 g in EtOH, dried, and treated with 40 mL/min H and 20 mL/min N during 16 h at .apprx.400° to prepare a catalyst.

A 1:2 (molar) CO-H mixture was passed over 10 mL of the catalyst (containing 30 mL SiO₂, pretreated with 200 mL/min H at 300°) at 275°, 51 kg/cm², and hourly space velocity 12,000 to give MeOH [67-56-1], AcH [75-07-0], EtOH, AcOMe [79-20-9], and AcOEt [141-78-6] with 5.2, 1.6, 41.4, 2.5, and 7.6% selectivity, resp. The conversion of CO was 10.5%.

IT 141-78-6P, preparation

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, from synthesis gas, catalysts for)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L11 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:46729 CAPLUS

DOCUMENT NUMBER: 94:46729

TITLE: Use of aluminum phosphates in the esterification of
acetic acid with **ethanol**
in the gas phase using the pulse microreactor
technique

AUTHOR(S): Vara, E.; Saura Calixto, F.; Marinas, J. M.

CORPORATE SOURCE: Fac. Cienc., Palma de Mallorca, Mallorca, Spain

SOURCE: Afinidad (1980), 37(368), 327-31

CODEN: AFINAE; ISSN: 0001-9704

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

AB The esterification of HOAc with EtOH is examined in the gas phase on a pulse
microreactor over Kearby type AlPO₄/SiO₂ and AlPO₄/Al₂O₃ catalysts which
are prepared in aqueous medium, using NH₄OH as precipitating agent and whose chemical and
texture characteristics are determined The reaction conditions are optimized.

IT 141-78-6P, preparation

RL: **PREP (Preparation)**

(from catalytic esterification of **ethanol** with **acetic**
acid in pulsed microreactor)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

Refine Search

Search Results -

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Database:

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US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

L3

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Search History

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<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L3</u>	L2 and silica	16	<u>L3</u>
<u>L2</u>	L1 and heteropolyacid	44	<u>L2</u>
<u>L1</u>	carboxylic ester and alcohol	8955	<u>L1</u>

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Search Results - Record(s) 1 through 10 of 16 returned.

☐ 1. Document ID: US 20040049068 A1

Using default format because multiple data bases are involved.

L3: Entry 1 of 16

File: PGPB

Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040049068

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040049068 A1

TITLE: Process for preparation of cinnamates using polyaniline salts as catalysts

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Palaniappan, Srinivasan	Hyderabad		IN	
Sairam, Malladi	Hyderabad		IN	

US-CL-CURRENT: 560/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 2. Document ID: US 20030135019 A1

L3: Entry 2 of 16

File: PGPB

Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030135019

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030135019 A1

TITLE: Method for producing a polymer, using caprolactam

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ohlbach, Frank	Dusseldorf		DE	
Winterling, Helmut	Ludwigshafen		DE	
Ansmann, Andreas	Wiesloch		DE	
Fischer, Rolf-Hartmuth	Heidelberg		DE	
Melder, Johann-Peter	Bohl-Iggelheim		DE	
Maixner, Stefan	Schwetzingen		DE	

US-CL-CURRENT: 528/312; 540/539

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	R0MC	Draw D
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Mar 20, 2003

US-CL-CURRENT: 502/150; 502/162, 502/255, 502/305

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Drawn Date
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Mar 2, 2004

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KNOC	Draw De
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Oct 21, 2003

http://westbrs:9000/bin/gate.exe?f=TOC&state=pabh7e.5&ref=3&dbname=PGPB,USPT,US... 8/30/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 6. Document ID: US 6362355 B1

L3: Entry 6 of 16

File: USPT

Mar 26, 2002

US-PAT-NO: 6362355

DOCUMENT-IDENTIFIER: US 6362355 B1

TITLE: Molybdated dispersants from heteropoly acids

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 7. Document ID: US 6350896 B1

L3: Entry 7 of 16

File: USPT

Feb 26, 2002

US-PAT-NO: 6350896

DOCUMENT-IDENTIFIER: US 6350896 B1

TITLE: Process for preparation of an ester using a polyaniline salt as catalyst

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 8. Document ID: US 6316659 B1

L3: Entry 8 of 16

File: USPT

Nov 13, 2001

US-PAT-NO: 6316659

DOCUMENT-IDENTIFIER: US 6316659 B1

TITLE: Method for producing cyclopentanone and cyclopentene-1-carboxylic acid and their esters

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 9. Document ID: US 6313358 B1

L3: Entry 9 of 16

File: USPT

Nov 6, 2001

US-PAT-NO: 6313358

DOCUMENT-IDENTIFIER: US 6313358 B1

TITLE: Method for producing hexanediol

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 10. Document ID: US 6222033 B1

L3: Entry 10 of 16

File: USPT

Apr 24, 2001

US-PAT-NO: 6222033

DOCUMENT-IDENTIFIER: US 6222033 B1

TITLE: Method for producing cyclic lactams

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NUMC	Drawings
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Terms	Documents
L2 and silica	16

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☐ 11. Document ID: US 6169192 B1

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L3: Entry 11 of 16

File: USPT

Jan 2, 2001

US-PAT-NO: 6169192

DOCUMENT-IDENTIFIER: US 6169192 B1

TITLE: Functionalized ferrocenyldiphosphines, a process for their preparation and their use

DATE-ISSUED: January 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pugin; Benoit	Munchenstein			CH
Landert; Heidi	Bourrignon			CH

US-CL-CURRENT: 556/11; 502/154, 502/155, 502/158, 556/12, 556/143, 556/144, 556/18, 556/22, 556/28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Examination	Prosecution	Claims	FIGS	Drawings
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☐ 12. Document ID: US 6127307 A

L3: Entry 12 of 16

File: USPT

Oct 3, 2000

US-PAT-NO: 6127307

DOCUMENT-IDENTIFIER: US 6127307 A

**** See image for Certificate of Correction ****

TITLE: Catalyst composition free from noble metals

Full	Title	Citation	Front	Review	Classification	Date	Reference	Examination	Prosecution	Claims	FIGS	Drawings
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☐ 13. Document ID: US 6040472 A

L3: Entry 13 of 16

File: USPT

Mar 21, 2000

US-PAT-NO: 6040472

DOCUMENT-IDENTIFIER: US 6040472 A

TITLE: Catalyst for use in producing carboxylic esters

Full	Title	Citation	Front	Review	Classification	Date	Reference	Set of Refs	Attachment	Claims	KWIC	Draw D
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☐ 14. Document ID: US 6002010 A

L3: Entry 14 of 16

File: USPT

Dec 14, 1999

US-PAT-NO: 6002010

DOCUMENT-IDENTIFIER: US 6002010 A

TITLE: Carboxylic acid derivative preparation process

Full	Title	Citation	Front	Review	Classification	Date	Reference	Set of Refs	Attachment	Claims	KWIC	Draw D
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☐ 15. Document ID: US 5693793 A

L3: Entry 15 of 16

File: USPT

Dec 2, 1997

US-PAT-NO: 5693793

DOCUMENT-IDENTIFIER: US 5693793 A

TITLE: Preparation of caprolactam from 6-aminocapronitrile

Full	Title	Citation	Front	Review	Classification	Date	Reference	Set of Refs	Attachment	Claims	KWIC	Draw D
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☐ 16. Document ID: US 5416240 A

L3: Entry 16 of 16

File: USPT

May 16, 1995

US-PAT-NO: 5416240

DOCUMENT-IDENTIFIER: US 5416240 A

**** See image for Certificate of Correction ****

TITLE: Preparation of poloxy-alkylene glycols

Full	Title	Citation	Front	Review	Classification	Date	Reference	Set of Refs	Attachment	Claims	KWIC	Draw D
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